

CLIMATOLOGICAL DATA FOR JANUARY, 1913.

DISTRICT NO. 3, OHIO VALLEY.

Prof. FERDINAND J. WALZ, District Editor.

GENERAL SUMMARY.

The weather conditions prevailing during January, 1913, in the Ohio Valley are notable for the unseasonably mild temperature, exceptionally light snowfall, excessive rains, and destructive floods; also the failure of the usual ice harvest. In nearly all sections of the district the temperature averaged the highest, except in 1890 and in some sections 1907, of any January of record for the respective States. At no station in the entire district did the temperature go as low as zero, the lowest recorded at any station being 2° at Hoopeston, Ill., on the 12th. Except on a few dates the minimum temperatures were universally unseasonably high, but the maximum temperatures were well within the records of past years. At only one station, Wytheville, Va., was the maximum record of January for past years broken. In Tennessee and the more southerly portions of the district temperatures were below freezing on comparatively few nights, and on no day did the temperature remain below freezing in those sections during the 24 hours.

Precipitation over the Ohio Valley as a whole was phenomenal and was much above normal in all sections, except the northern portion of western North Carolina and in southwestern Virginia, and was the greatest for any month in several sections. Especially notable was the rainfall for the State of Kentucky and for central and western Tennessee. The average rainfall for the whole State of Kentucky was 11.41 inches, which is three times the normal amount for January and one-fourth the average annual amount for that State. For the sections of Tennessee mentioned similar conditions prevailed. As a result of general and heavy rains over such extensive areas of the watershed, widespread and destructive floods occurred in the Ohio River in practically all its tributaries and in the smaller streams of the various States. The greatest destruction, however, was wrought in the lower Green River Valley of Kentucky and along the lower portions of the Cumberland and Tennessee Rivers in Kentucky and Tennessee.

The month was particularly marked by the absence of the severe winter storms common to the season. Several barometric disturbances of moderate gradient passed over the district, but they were in the main attended by heavy rains and mild temperature and were not succeeded by the usual cold waves. The most notable barometric occurrences were: (1) The low-pressure area which developed in the Gulf section and moved slowly northeastward through the lower Mississippi and Ohio Valleys in the period 4th-7th, attended by general and heavy rains; (2) the low-pressure area which developed over the southern Rocky Mountain slopes on the 10th, moved across the central valleys on the 11th, and reached the Allegheny Mountains and Atlantic Coast States by the morning of the 12th, and which also was attended by general and heavy rains;

(3) the barometric disturbance which developed over the eastern Rocky Mountain slopes on the 22d and crossed the central valleys on the 23d, attended by general and moderately heavy rains. The center of this latter disturbance, however, passed to the northward across the Lake region.

The following table summarizes the chief features of meteorological interest for the several sections of the district:

Portions of States included in the Ohio River basin.	Temperature.						Precipitation.					
	Average.	Departure.	Highest.	Lowest.	Average.	Departure.	Greatest monthly.	Least monthly.	Greatest in 24 hours.	Average number of days.	Average snowfall.	
New York.....	34.2	+10.5	58	6	5.01	+2.02	5.87	4.25	1.08	15	7.1	
Pennsylvania.....	36.8	+ 8.6	64	3	6.59	+3.14	8.19	3.20	1.90	18	8.0	
Maryland.....	36.0	+ 9.3	62	5	5.51	+1.48	5.85	5.14	1.00	16	11.3	
West Virginia.....	40.9	+ 8.4	74	10	6.67	+2.91	10.53	3.47	2.97	15	5.7	
Ohio.....	37.5	+ 8.4	70	4	7.31	+4.38	10.80	4.50	2.54	17	7.8	
Indiana.....	35.9	+ 6.7	66	5	8.56	+5.72	12.20	3.71	3.50	16	4.6	
Illinois.....	35.2	+ 5.1	63	2	8.22	+4.98	12.96	4.93	3.15	14	2.1	
Kentucky.....	42.5	+ 7.3	76	13	11.41	+7.70	14.81	5.01	5.80	14	1.4	
Tennessee.....	46.4	+ 7.8	75	7	9.36	+5.90	16.62	3.40	5.48	14	1.2	
Alabama.....	46.6	+ 5.5	78	19	8.15	+3.73	11.12	6.55	2.60	12	T.	
Georgia.....	46.3	+ 6.8	69	22	7.31	+2.05	—	—	1.80	12	3.0	
North Carolina.....	43.3	+ 7.1	73	13	4.60	+0.09	7.88	2.81	1.80	11	1.2	
Virginia.....	41.8	+ 8.5	72	11	4.34	+0.83	8.59	1.88	1.80	10	1.8	

TEMPERATURE.

The unseasonably high temperature which set in about the close of December continued through nearly the whole of January, there being but a day or two at rare intervals when the temperature was not above normal. The warmest period was the 15th-20th, when the mean daily temperatures generally ranged from 10° to 25° in excess of normal, although there were quite a few other days scattered through the month when the excess was equally large; furthermore, on the 7th in the southeastern portion of the district the excess was even greater, being as much as 29° above normal at several stations. For the entire month the average temperature of the several sections of the district was in excess of the normal in amounts ranging between 5.1° and 10.5° . Maximum temperatures were generally well within the extremes of past years, but minimum temperatures, as a rule, were unusually high, and at no station was a temperature as low as zero reached.

PRECIPITATION.

Precipitation was remarkably heavy over practically the entire watershed of the Ohio River. The monthly amounts have never been equaled in January over the major portion of the valley, nor in any month of past years over a large part of it. Over the southern portion of Indiana, extreme southern Illinois, nearly the whole

of Kentucky, and over central and western Tennessee the fall for the month ranged from 10 to over 16 inches, while from 6 to 10 inches fell over the remainder of the district, except over a narrow area extending from the upper Cheat River section of West Virginia southward to the Asheville section of North Carolina, where there were from 2 to 4 inches, and in the extreme northeastern corner where there were from 3 to 6 inches.

Precipitation, especially rain, was remarkably frequent during the month, occurring almost daily. The periods freest from precipitation were the 9th-10th—except that there was more or less general rain in Ohio and Indiana—the 13th-15th and the 25th, 26th, and 30th. On the 27th there was no precipitation of consequence over States north of the Ohio River, but rains were general and quite heavy over the southern and eastern parts of the district, including Tennessee and West Virginia.

Snow fell quite generally on the 3d and 4th, ranging in amount from a trace to 6 inches, and over the more northerly and easterly portions of the district on the 21st, 28th, and 29th. Except on these dates the snowfall was exceedingly light and scattering. The total amount for the month was of little importance in any section of the district and that remaining on the ground for any length of time was small.

The greater portion of the precipitation occurred in the periods 6th-8th and 11th-12th, when from 5 to 10 inches fell over large areas of the district and 24-hour amounts ranging from 2 to 6 inches were of common occurrence.

At Marietta, Ohio, where there is a precipitation record of 93 years, the January amounts have exceeded this month's only twice, namely, in 1882 and 1907. At Portsmouth, Ohio, with an 82-year record, the amount for this month has been exceeded only once, namely, in 1898, while for the State of Ohio as a whole the precipitation for January, 1913, is the sixth greatest for any month in a period of 50 years. For the States of Kentucky and Tennessee the precipitation record for January, 1913, is not equaled by any month in the climatic annals of those States.

MISCELLANEOUS.

Thunderstorms were unusually frequent for January. They occurred on the 1st in northern Alabama, the 5th in Illinois and Kentucky, the 6th in Ohio, Indiana, Illinois, Kentucky, and Tennessee, the 7th in Illinois, Kentucky, and Tennessee, the 11th and 12th in West Virginia, Kentucky, and Tennessee, the 12th and 13th in Alabama, the 16th in Kentucky, the 17th and 18th in Ohio, the 18th in Pennsylvania, West Virginia, and Tennessee, the 20th in Pennsylvania, Kentucky and Illinois, the 21st, 22d, and 23d in Tennessee, the 23d in Ohio, the 30th in Kentucky, and the 30th and 31st in Tennessee.

During the 5th, 6th, and 7th, with rain falling steadily, the temperature in Illinois and parts of Indiana remained near freezing or below, consequently a heavy coating of ice formed on the ground and all exposed objects resulting in extensive damage to trees and electric-service wires. It was pronounced to have been the worst condition of this kind during the past 30 years.

January 18.—Considerable damage to trees and buildings in Allegheny and Westmoreland Counties, Pa., resulted from high winds. In Richland County, Ohio, a barn was struck by lightning and destroyed with all its contents.

January 20.—A wind squall struck Indianapolis, Ind., at 10.33 a. m., lasting only about 5 minutes, but caused a damage of about \$2,000. At Danville, Ill., 2 inches of rain fell in three hours and caused the suspension of street-car traffic. A large barn near Georgetown, Ill., was struck by lightning and destroyed; also, in that vicinity two horses were killed by lightning.

JANUARY FLOOD IN THE OHIO VALLEY.

During the first 13 days of January, from 6 to 12 inches of rain fell over the extreme southerly portions of Illinois and Indiana, the southwestern edge of Ohio and over nearly the whole of Kentucky, and the western half of Tennessee, while there were from 4 to 6 inches over considerable of the remainder of the Ohio Basin. Much the greater part of this rain fell in two periods, namely, 6th-8th and 11th-12th. The rains in the lower valley, especially in the Green River section of Kentucky, and the Cumberland and lower Tennessee River Basins of Kentucky and Tennessee take rank among the heaviest rainfalls anywhere in the Ohio Valley in recent years and are comparable only to the rains in the lower Ohio Basin of October 3-6, 1910. (See Monthly Weather Review, District No. 3, October, 1910.)

Fortunately the rains were not so heavy over the upper portion of the Ohio Basin and there was comparatively little snow on the ground in any section, also that the ground mostly was soft and unfrozen. The greatest accumulation of snow, and the only section where it was of any importance, was over the watershed of the Allegheny River, and this river did not reach flood stage except in the lower portion.

The following account of the flood, extracted from the reports of United States Weather Bureau section directors and officials in charge of river districts in the Ohio Valley, gives somewhat in detail its extent and the amount of damage suffered:

Pittsburgh, Pa., district.—There were two distinct floods in the Pittsburgh district: The first on the 8th-9th, when a flood crest of 31.3 feet, or 9.3 feet above flood stage, was reached at 7 a. m., of the 9th, resulted from moderately heavy rains together with the melting of a snow cover of from 1 to 5 inches. The second occurred on the 12th-13th, when a crest of 26.3 feet was reached at Pittsburgh at 1 a. m., of the 13th. Timely warnings of both floods were issued by the local office of the Weather Bureau at Pittsburgh and practically all property that could be moved was placed beyond the reach of damage. The losses sustained were therefore confined more largely to heavy machinery and such stock as it was impractical to move and to the enforced suspension of business. There was also considerable damage to farm lands by erosion. The estimated total amount of damage of all kinds is \$750,000; also one life was lost at McKees Rock, Pa. The estimated value of property saved by the warnings is about \$2,000,000. A large bridge in course of construction across the Allegheny River at Pittsburgh was undoubtedly saved by the warnings. As soon as warnings were received a large force of men was put to work to reinforce the structure, enabling it to withstand the washing away of the false work, which occurred on the morning of the 9th.—GEORGE H. BLISS, Section Director, Philadelphia, Pa., and HENRY PENNYWITT, Local Forecaster, Pittsburgh, Pa.

Parkersburg, W. Va., district.—The Ohio River was above flood stage at Wheeling January 9-14, crest 44.2 feet on the 10th; at Parkersburg January 9-16, crest 45.1 feet on the 13th; and at Point Pleasant January 9-16, crest 50.4 feet at 2 p. m. the 13th. Timely warnings were issued from the local office of the Weather Bureau at Parkersburg, and the loss is estimated to be only about \$20,000, most of which was to property that could not be moved.—H. C. HOWE, Section Director, Parkersburg, W. Va.

Cincinnati, Ohio, district.—The Ohio was above flood stage at Catlettsburg January 10-17, crest 56 feet on the 14th; at Portsmouth January 11-18, crest 58.2 feet the 14th; at Maysville January 12-18, crest 57.3 feet the 14th, and at Cincinnati January 11-20, crest 62.2 feet in the early morning of the 15th. Timely warnings, forecasts of expected stages and the time and height of flood crest, and general information regarding the flood were issued from the local office of the Weather Bureau at Cincinnati, which resulted in the saving of property esti-

mated at value of \$1,600,000. The estimated value of property damage in the district is about \$106,000, and the money value of losses occasioned by enforced suspension of business, loss of wages, and cost of removing and protecting property, is estimated at \$400,000. The damage to crops and farm lands was slight.—W. C. DEVEREAUX, Local Forecaster, Cincinnati, Ohio.

Columbus, Ohio, district.—High water prevailed in all streams of Ohio during most of the time from the 8th to the 26th. In the Scioto watershed flood stages occurred at Delaware on the 8th, 11th, 17th, and 18th, and at Chillicothe on the 13th, 14th, 19th, 20th, and 25th. The Muskingum was above flood at Coshocton from the 8th to the 15th and from the 18th to the 26th. The Great and Little Miami Rivers were high on several dates, particularly on the 8th and 12th, but at no time was a flood stage reached. While some damage was reported from the southern hill counties, it is not believed to have been very great. At Columbus on the 8th a groceryman with his horse and wagon was swept down the stream and lost. At Mineral City, in the Muskingum watershed four young men accidentally drove their team into the river. Their horses were drowned, and the men escaped with great difficulty. At Kenton, near the head of the Scioto, and Massillon, near the head of the Muskingum, the high water flooded parts of the towns and drove a number of families out of their homes. But the loss by floods was not serious except along the Ohio River.—J. WARREN SMITH, Professor of Meteorology, Columbus, Ohio.

Indianapolis, Ind., district.—The floods in the Wabash and White Rivers were confined to the lower reaches; in the upper reaches there was only a slight overflowing. The crest of the principal flood on the Wabash passed Logansport on the 21st, Attica on the 23d, Terre Haute on the 25th, and Mount Carmel on the 30th. On the West Fork of the White it passed Indianapolis on the 22d, and Elliston on the 25th. On the East Fork of the White it passed Shoals on the 25th. Frequent and heavy rains caused the floods to continue longer and the crest to move more slowly than in the majority of floods in these rivers. While the bottom lands were overflowed in many places, the damage resulting was much less than it would have been at other seasons of the year and was practically confined to the district along the White River from the junction of the East and West Forks to its mouth, and the lower course of the West Fork of the White River.—V. H. CHURCH, Section Director, Indianapolis, Ind.

Cairo, Ill., district.—At the close of January, floods were in progress over the entire immediate Ohio Valley comprised in this district, over the Wabash section in the vicinity of Mount Carmel, Ill., and over the Tennessee River Valley in the vicinity of Riverton, Ala. Reports as to the extent and damage of these floods will be made after they subside.—R. T. LINDLEY, Local Forecaster, Cairo, Ill.

Springfield, Ill., district.—Floods in the Wabash and Ohio Valleys during the last two decades of January caused much damage, an estimate of which is at present impossible. The rivers at Mount Carmel and Shawneetown passed the flood stage about the middle of the month and continued above into February. At the close of January the Wabash River in the vicinity of Mount Carmel was from 7 to 15 miles wide. The warnings of the Weather Bureau saved much property, but thousands of bushels of corn and many head of cattle were lost, and residents of the lowlands were rendered temporarily homeless. Railroads and highways were impassable and business was at a standstill. From the confluence of the Little Wabash and the Wabash proper, the main current of the latter was diverted from its usual channel, taking a southwesterly course and flowing into Saline River a short distance below Equality, Ill. In former years the diversion has occurred only when the water reached a stage of 52 feet on the Shawneetown river gage, but this time the current broke through when the stage reached 49 feet on that gauge.—C. J. Root, section director, Springfield, Ill.

Nashville, Tenn., district.—Moderately low stages prevailed on the Cumberland River until the 6th, when heavy rains started a rapid rise and flood stages were passed in 48 to 60 hours. At Burnside the river was above flood stage on the 8th and 9th, reaching a crest of 61.5 feet at 6 a. m. on the 8th, the highest since March 30, 1912. At Celina it was above flood stage the 9th to 13th, reaching a crest of 50.1 feet at 7 a. m. on the 12th, which is the highest at that station since records began December, 1903. At Carthage the river was above flood stage from the 9th to the 16th, inclusive, reaching a crest of 48.8 feet at 1.30 p. m., of the 13th. At Nashville flood stages obtained from the 8th to the 19th, inclusive, a crest of 48.4 feet being reached at 2.20 p. m., on the 13th, which is the highest since March, 1897. This stage, however, has been exceeded at Nashville seven times in the past 41 years. At Clarksville flood stages obtained from the 8th to the 22d, a crest of 56 feet being reached at 9 a. m., on the 9th which is the highest since records began in 1901 and 2.4 feet higher than in April, 1912, but considerably lower than the reputed high-water mark, 60.6 feet, January, 1832. The river was above flood stage at Clarksville again from the 28th to the 31st, inclusive, but the crest of the wave was only 44 feet. The effect of local tributaries and rainfall distribution is shown in the fact that the crest of the flood was reached at Clarksville so many days in advance of the crest at Nashville, 50 miles or more above. Rainfall

usually comes to the lower watershed first. An interesting incident occurred when a train on the Louisville & Nashville Railroad near Cumberland City collided with a steamboat navigating the swollen Cumberland River. The collision occurred at night. The boat was somewhat damaged.—ROSCOE NUNN, Section Director, Nashville, Tenn.

Louisville, Ky., district.—The remarkably heavy rains during the first 13 days of the month and especially in the periods 6th-8th and 11th-12th, when 24-hour amounts ranging from 1.5 to nearly 6 inches were common in one or the other or both of these periods in practically all parts of Kentucky, except the east-central portion, caused destructive floods in the rivers and streams, large and small, in nearly all sections of the State. Lowlands were flooded, forming vast inland seas, highlands and slopes were eroded, bridges and fences swept away, and homes, barns, and houses of various kinds were inundated by the thousands. Planted and stored crops were swept away or damaged, highways washed, trains and mail service suspended or impeded, and business partially suspended in nearly all sections and wholly stopped in some, as in much of the Green River Valley, where in a number of localities entire communities became flood refugees. There was much distress and suffering from exposure and hunger, and a wide call for relief for the destitute.

KENTUCKY RIVER.

The Kentucky River was above flood stage, 30 feet, at Beattyville on only one day, the 8th, and no damage of consequence was done by the river at that point or above. In fact, the high water was beneficial in the upper reaches of the Kentucky and other mountain streams on account of causing a good logging tide, thus enabling timber men to get saw logs to market and the numerous sawmills which had been idle a long time to resume operations and give employment to many men. At High Bridge the Kentucky River was above flood stage (27 feet) during three days, 8th to 10th, inclusive, and at Frankfort (31 feet) during five days, 9th to 13th, inclusive. From both places have come reports of great damage from landslides along the steep banks of the river, these landslides being more extensive than ever before known in those sections. The waterworks pumps at Frankfort were put out of commission by the high water and there was much inconvenience and some suffering on account of the water famine in that city.

In the entire Kentucky River drainage area as far up as Beattyville business interests, including transportation, mail, telegraph, and telephone services, were badly demoralized on account of high water in streams of all sizes. Country travel where streams had to be crossed was dangerous if not impossible, as creeks could not be forded and many bridges were carried away or else made unsafe. Many hundreds of houses along the river banks and larger streams and in the lowlands were inundated and had to be temporarily vacated. All train service was late, and some of the railroads had to abandon schedules for a day or two. Flood warnings were issued to the river observer at Frankfort, Ky., beginning the morning of the 8th, and from there disseminated by telephone and through the newspapers; also through the Louisville papers which circulate largely in all parts of the State.

OHIO RIVER.

At Madison, Ind., the Ohio River was above flood stage (46 feet) from the afternoon of the 11th to the early morning of the 21st, the crest of the flood, 55.4 feet, being reached on the 14th. No serious damage was reported from Madison and vicinity, the major loss being the expense of moving property and household goods from the flooded zone, regular and timely warnings being issued from the Louisville office. At Louisville the Ohio River was above flood stage from about noon of the 11th to about noon of the 22d, reaching a crest of 39.5 feet at 3 p. m., of the 14th. The damage at Louisville from suspension of business in the submerged sections, the interference with transportation service, suburban electric service, train and rural mail service, the inundation of homes, business houses, factories, lumber and coal yards, the damage to dredging machinery and implements buried under water and mud in the cut along the Louisville and Portland Canal, which were being used in the extensive work of the enlargement of that canal, and the cost of moving household goods, merchandise, and other property was large, probably amounting to about \$200,000. Shippingport, a small section of the city lying between the Louisville and Portland Canal and the Ohio River, was submerged by noon of the 12th, but 78 families comprising practically the entire residential section, had been moved out of their homes by the police and fire departments on the 11th, after due warning had been given by the Weather Bureau. During the 12th special warning was given to the city officials that the water would sweep over the "cut-off" in the northeastern part of the city, and flood that entire section, and the families were hurriedly removed from their homes during that day and night. By 6 a. m., of the 13th, with a stage of 37.6 feet, the water began to go over the "cut-off" and at 10 a. m., when the stage had reached 38 feet it was pouring over in a stream 50 feet wide. The flood gates were then opened and the entire section was inundated,

1,700 families being rendered homeless in that section of the city. Many men were thrown out of employment by suspension of business, and there was great suffering and destitution.

The damage and loss by the floods in the Kentucky River Valley and the Ohio River section from Madison to 50 miles below Louisville is estimated to be about \$450,000. The money value of property saved by the Weather Bureau warnings and flood information is approximately \$1,000,000.

GREEN RIVER.

The greatest loss and suffering in Kentucky from the January, 1913, floods were experienced in the lower Green River Valley, particularly in the lowlands of McLean, Webster, and Hopkins Counties. In that section there were many instances where crops, the work of the year, were swept away, live stock drowned, houses inundated and whole communities forced to flee for their lives. At Calhoun, the county seat of McLean County, and which is located near the center of the most devastated region, between 2,000 and 3,000 persons were rendered homeless and largely destitute by the flood. The courthouse was turned over to the occupancy of refugees from their homes. The cooperative observer at Calhoun reports that the water was the highest since 1883. The river was swollen to a width of 5 miles, islands dotting here and there where an occasional hill rose above the water and on which the people of the lowlands with their stock had collected. Rumsey, across the river from Calhoun, with a population of about 200, was all under water. The stage of water at Green River Lock No. 2, located at Rumsey, reached a crest of 35.5 feet and remained above 35 feet for 7 days. On a knoll about 3 miles from Calhoun, 40

persons were marooned in a house situated on a hill. They had been driven to the knoll from the lowlands and during the night the water rose to such an extent as to cut off escape. They had been there two days when discovered. A schoolhouse in McLean County sheltered 50 refugees. At Ashbyburg, in Hopkins County, a village situated on a hill a short distance below the confluence of the Pond and Green Rivers, and which had been made an island by the flood, surrounded by from 2 to 5 miles of water, there were nearly 1,000 people marooned. Most of these were refugees from the lowlands of McLean, Webster, and Hopkins Counties and had brought with them their flocks and herds. Food and forage had become exhausted when relief came. Conditions in the lower Green River Valley, except as to extent of flooded territory, were fully as bad as those at Hickman during the Mississippi River flood of last year. Great damage was also done by the Barren, Rough, and other tributaries of the lower Green River.

There was considerable damage also in the upper reaches of Green River, at least as far up as Greensburg where the water reached the highest mark ever known. Greensburg was entirely surrounded for several days. Entrance and exit from the town became impossible. Streets leading to the railroad station were under 15 feet of water. Two large steel bridges, one located at Berrys Ferry and the other at Wells Ferry, both of which were built above supposed high-water mark, were submerged to a depth of 5 feet or more. Lowlands in many localities in this section were swept clear of houses, haystacks, and fodder, besides there was great loss in stock of all kinds, horses, colts, mules, cattle, and hogs. Moreover, thousands of dollars worth of damage was done along the tributaries of the upper Green River.—F. J. WALZ, Professor of Meteorology, Louisville, Ky.

TABLE 1.—Climatological data for January, 1913. District No. 3, Ohio Valley.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.					Precipitation, in inches.					Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.		
<i>New York.</i>																			
Allegany.	Cattaraugus.	1,441	7	35.0		58	8	6	9	40	5.87	1.08	6.2	17	6	21	sw.	Charles E. Whitney.	
Bolivar.	Allegany.	1,800	19	33.5	+10.5	53	17†	7	9	38	4.90	+2.02	0.80	5.5	16	8	6	sw.	Charles F. Hoffman.
Olean.	Cattaraugus.	1,402	5	.....							4.25		1.08	9.5	13	.....	.....	John W. Alles.	
<i>Pennsylvania.</i>																			
Aleppo.	Green.	1,135	12	39.0	+ 8.6	63	20†	15	22	41	7.59	+ 4.05	1.36	6.0	15	8	3	20	J. S. Hinerman.
Baldwin.	Butler.	1,404	7	36.0*		55	8†	13*	13	38*	7.64		1.13	9.0	20	3	5	23	S. H. Templeton.
Beaver Dam.	Beaver.	674	19	36.9		60	21	9	5	37	5.78	+ 3.09	1.15	5.5	21	5	4	22	U. S. Engineer.
Brookville.	Jefferson.	1,173	23	36.9		60	21	9	5	37	3.20	+ 0.20	0.50	2.5	20	.....	.....	H. C. Bartholomew.	
Clarion.	Clarion.	1,078	28	.....							6.70	+ 2.92	1.30	9.5	17	10	0	21	J. A. Miller.
Claysville.	Washington.	1,127	9	39.6		64	21	17	13	42	6.35		1.00	5.0	17	8	7	16	E. T. Buchanan.
Confluence.	Somerset.	1,352	29	.....							6.26	+ 2.27	1.25	8.9	9	6	6	16	Grant Pyle.
Franklin.	Venango.	955	39	34.6	+ 7.9	59	20	14	5†	37	7.63	+ 3.88	1.38	7.3	9	2	20	F. E. Dixon.	
Freeport.	Armstrong.	772	40	.....							7.79	+ 4.00	1.00	4.1	19	6	2	23	Mrs. Anna R. Burtner.
Greensburg.	Green.	763	24	.....							7.42	+ 3.73	1.60	5.2	20	9	2	20	James G. Cramer.
Greenville.	Mercer.	950	17	34.4	+ 7.4	58	20	6	5	32	6.93	+ 3.36	1.27	12.0	17	9	1	21	A. M. Orr.
Indiana.	Indiana.	1,350	16	37.6	+ 9.0	60	21	14	13	37	6.42	+ 2.79	1.08	10.5	18	8	7	18	R. W. Wehrle.
Johnstown.	Cambria.	1,184	25	38.3	+ 8.5	61	20	17	13	35	8.19	+ 4.06	1.90	9.4	25	8	5	18	E. C. Lorentz.
Lock No. 4.	Washington.	718	27	.....							5.83	+ 2.77	1.10	7.0	15	1	5	25	R. T. McGowan.
Lycippus.	Westmoreland.	1,420	21	38.9	+ 9.6	62	20	11	9†	40	7.59	+ 4.10	1.25	11.1	18	.....	.....	Murray Forbes.	
Mosgrove.	Armstrong.	775	2	.....							6.52		1.13	6.1	19	11	0	20	C. J. Moore.
Pittsburgh.	Allegheny.	842	43	40.2	+ 9.5	63	20	19	9	37	5.28	+ 2.41	0.86	9.3	20	7	5	19	U. S. Weather Bureau.
Saegerstown.	Crawford.	1,116	22	34.1	+ 8.7	56	21	9	5†	39	7.19	+ 3.85	1.00	9.5	15	3	3	28	J. G. Apple.
Sharon.	Mercer.	940	28	36.0		61	21	7	5	44	5.90		1.27	8.9	17	6	2	23	Norman D. Powell.
Skidmore.	Lawrence.	1,000	9	34.7		58	20	3	5	41	4.80		1.00	6.0	15	11	1	19	W. H. Stoner.
Somers.	Somerset.	2,250	57	33.0	+ 7.0	58	2	6	22	35	6.38	+ 1.66	1.06	11.3	16	4	10	17	W. M. Schrock.
Uniontown.	Fayette.	999	25	39.6	+ 7.4	63	17	14	22	30	7.94	+ 4.37	1.14	6.5	19	1	11	19	Wm. Hunt.
Warren.	Warren.	1,137	24	35.5	+ 10.4	60	20	11	14	32	5.91	+ 3.00	0.65	12.3	17	8	0	23	Anna Simpson.
<i>Maryland.</i>																			
Deer Park.	Garrett.	2,457	20	35.2	+ 9.1	62	20	8	9	36	5.85	+ 2.06	0.93	9.1	15	.....	.....	S. P. Specht.	
Grantsville.	do.	2,351	20	36.6*	+ 9.7	60*	18	8*	9	37*	5.14	+ 1.55	1.00	12.5	14	5	5	21	J. S. Miller.
Oakland.	do.	2,461	14	36.2	+ 9.2	62	20	10	10†	44	5.53	+ 0.84	0.84	12.3	19	8	7	16	R. E. Weber.
<i>West Virginia.</i>																			
Bancroft.	Putnam.	574	10	40.8	+ 6.3	68	20	21	4	39	6.89	+ 3.02	1.75	3.0	14	8	0	23	R. E. Dent.
Beckley.	Raleigh.	2,440	14	38.6	+ 6.2	65	11	15	28	42	4.61	+ 1.03	1.02	5.0	9	14	5	12	John A. Ewart.
Bens Run.	Pleasant.	622	12	41.0	+ 9.6	67	20†	22	13†	36	8.48	+ 4.44	1.70	4.0	16	13	3	15	J. D. Riggs.
Bluefield.	Mercer.	2,563	19	44.2	+ 10.5	69	7	19	31	40	3.51	+ 0.51	1.06	7	13	7	11	Norfolk & Western Ry.	
Buckhannon.	Upshur.	1,472	23	40.9	+ 9.6	65	6†	18	4†	39	7.29	+ 3.33	0.90	5.0	16	11	2	18	H. A. Darnall.
Cairo.	Ritchie.	667	11	39.4	+ 5.4	65	21	20	24	41	8.77	+ 4.73	2.10	3.0	19	2	11	18	Van A. Zevely.
Central Station.	Doddridge.	900	11	40.6	+ 9.6	66	20	18	5†	37	5.67	+ 2.22	0.82	6.0	18	7	18	G. W. Sherwood.	
Charleston.	Kanawha.	598	28	47.2	+ 8.4	70	20†	24	13	39	6.74	+ 3.15	1.34	4.0	16	10	4	17	R. C. Hewes.
Creston.	Wirt.	612	12	45.8*	+ 8.7	67	20	20†	4	35*	7.76	+ 4.47	1.94	5.5	20	7	3	21	J. M. Reed.
Cuba.	Jackson.	544	13	41.5	+ 8.6	68	20	19	4†	33	8.42	+ 5.15	2.13	3.5	17	10	5	16	C. T. Ferry.
Doane.	Wayne.	6	21	.....							8.12		1.86	14	10	9	12	L. A. Smith.	
Elkhorn.	McDowell.	1,933	21	45.6	+ 9.3	69	7†	20	4	35	6.41	+ 3.46	0.85	6.0	14	11	8	12	J. J. Lincoln.
Elkins.	Randolph.	1,940	14	41.2	+ 12.1	65	20	17	13	40	5.30	+ 1.96	0.94	2.1	20	6	10	15	U. S. Weather Bureau.
Fairmont.	Marion.	879	21	39.8		64	20	20	10†	39	6.99	+ 3.27	2.06	6.0	20	13	1	17	F. P. Hall.
Glenville.	Gilmer.	733	24	42.8	+ 10.4	70	20	13	42	7.89	+ 3.79	1.60	2.0	16	7	5	19	Joe N. Craddock.	
Grafton.	Taylor.	985	21	42.3	+ 10.4	67	20	19	9	40	8.42	+ 4.69	2.10	4.5	19	12	1	18	Joseph Gerken.
Green Sulphur Springs.	Summers.	1,600	18	40.6	+ 8.1	68	19	10	10	46	3.54	+ 0.68	0.83	2.0	12	8	9	14	Arthur George.
Hinton.	do.	1,400	24	41.9	+ 7.4	66	20	21	10	40	3.58	+ 0.65	0.88	0.5	15	13	0	18	J. B. Lavender, C. E. Ferguson.
Holcomb.	Nicholas.	1	39.6*	.....	67*	20	12	4	41*	6.41	.....	.....	14.0	12	11	6	14	.....
Huntington.	Cabell.	510	18	41.6	+ 9.0	68	20	25	4†	39	6.92	+ 3.40	1.68	1.5	13	10	1	20	.....
Lewisburg.	Greenbrier.	2,200	13	39.4	+ 7.7	60	7†	16	10	35	3.47	+ 0.10	0.87	7.0	9	19	6	6	Geo. T. Argabrite.
Logan.	Logan.	665	11	45.4	+ 6.4	71	20	7	7	20	7.02	+ 2.34	3.5	3.0	16	11	1	21	Dr. J. E. McDonald.
Lost Creek.	Harrison.	1,033	17	39.5	+ 6.9	64	20	14	10	44	7.68	+ 3.97	1.63	3.5	16	11	2	18	Allen Smith.
Madison.	Boone.	704	8	.....							8.12		1.86	14	10	9	11	S. E. Bradley.	
Mannington.	Marion.	967	11	39.7	+ 9.4	65	20	16	5	38	8.58	+ 4.19	1.57	8.5	19	11	2	18	.....
Marlinton.	Pocahontas.	2,169	14	34.4	+ 5.9	55	11†	10	19	34	4.42	+ 0.97	0.90	4.0	15	15	1	5	J. A. Morgan.
Morgantown.	Monongahela.	1,250	39	40.8*	+ 9.0	64	20	16	14	35*	7.70	+ 3.81	1.31	6.0	15	8*	8*	Horace Atwood.	
Moundsville.	Marshall.	640	11	41.2	+ 9.5	66	20	21	10†	40	6.16	+ 3.07	1.16	16	10	0	21	M. L. Brown.	
New Cumberland.	Hancock.	987	14	38.0	+ 10.2	62	20†	12	5	42	6.05	+ 3.64	1.20	6.0	14	8	3	20	Frank S. Evans.
New Martinsville.	Wetzel.	634	20	40.6	+ 8.2	68	20	21	5	32	7.39	+ 3.95	1.42	15	7	9	15	Wm. Ankrum.	
Nuttallburg.	Fayette.	2,252	21	37.5*	+ 6.0	64	11	18	13	40 ^b	4.30	+ 1.17	1.20	8.0	7	8 ^b	8 ^b	Miss Donna Tully.	
Parkersburg.	Wood.	638	25	42.2	+ 10.9	68	20	23	3	34	8.22	+ 5.03	2.97	3.5	20	6	5	20	U. S. Weather Bureau.
Parsons.	Tucker.	1,662	14	38.7	+ 7.5	66	20	14	9†	48	5.72	+ 0.82	0.90	11.0	16	9	11	J. W. Swisher.	
Philipps.	Barbour.	1,192	21	41.8	+ 10.0	67	20	16	10	39	7.35	+ 3.37	1.17	10.8	22	12	7	12	J. D. Dadisman.
Pickens.	Randolph.	2,783	23	41.0	+ 10.0	62	20	15	13	38	8.67	+ 2.44	1.65	18.0	15	11	5	15	Dr. J

TABLE 1.—Climatological data for January, 1913. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.	Sky.	Prevailing wind direc- tion.	Observer.
				Mean.	Departure from the normal.	Highest. Date.	Lowest. Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of part- ly cloudy days.	Number of cloudy days.						
Ohio—Continued.																						
Brilliant.	Jefferson.	700	9	42.6	.....	63	21	20	7.15	.....	0.70	5.0	10	7	5	19	w.	Mrs. Mary K. Pennell.		
Cadiz.	Harrison.	1,245	9	37.4	.....	61	20	17	13	34	1.20	13.2	17	8	4	19	sw.	Harry B. McConnell.			
Cambridge.	Guerney.	803	21	37.4	+ 0.0	62	20	15	5	35	1.09	6.0	16	2	16	13	s.	Samuel Mehaffey.				
Camp Dennison.	Hamilton.	570	20	40.0	+ 8.6	64	20	15	9	31	1.83	2.0	16	12	6	13	s.	Henry F. Pinkvoss.				
Canal Dover.	Tuscarawas.	884	20	36.3	+ 8.9	58	8	8	5	30	1.30	13.0	17	6	7	18	s.	Ed. S. Slingluff.				
Canton.	Stark.	1,089	30	35.1	+ 8.0	59	20	5	35	6.84	1.85	1.05	12.5	20	11	3	17	s.	Carl H. Meyer.			
Cardington.	Morrow.	1,010	18	35.8	+ 9.5	58	11†	8	9†	50	6.83	4.27	1.05	16	6	0	25	s.	J. W. Shaw.			
Chillicothe.	Ross.	630	10	.....	.....	.....	.....	7	11	1.60	0.5	14	.....	.....	.....	.....	.....	s.	Marion Mackey.	
Cincinnati.	Hamilton.	628	42	40.6	+ 8.3	64	20	12	31	40	9.02	+ 5.66	1.79	1.5	18	3	8	20	s.	U. S. Weather Bureau.		
Circleville.	Pickaway.	694	25	38.8	+ 8.6	64	20	13	4†	39	7.73	+ 4.93	1.20	.....	6	6	16	s.	Dr. H. R. Clarke.		
Clarington.	Monroe.	600	10	39.3	+ 8.1	66	20	18	4	42	7.79	+ 3.70	1.25	9.0	19	7	7	17	sw.	Col. S. Tschappat.		
Columbus.	Franklin.	918	35	36.8	+ 8.2	62	20	8	31	40	6.63	+ 3.68	1.19	5.9	19	7	5	19	s.	U. S. Weather Bureau.		
Coshocton.	Coshocton.	770	4	.....	.....	.....	.....	7	52	1.06	.....	18	.....	.....	.....	.....	.....	.....	s.	Mrs. Ada Jeffries.
Dayton (1).	Montgomery.	899	2	36.9	+ 7.3	60	20	8	31	42	6.66	+ 3.65	1.02	3.0	19	4	6	21	s.	U. S. Weather Bureau.		
Dayton (2).	do.	790	32	37.6	+ 8.7	61	20	15	9	35	7.43	+ 4.35	0.99	5.8	20	s.	Mrs. Edith L. Boyer.	
Delaware.	Belmont.	896	16	33.8	+ 5.2	59	20	7	9	32	6.93	+ 4.12	1.33	7.0	16	10	3	18	s.	De Witt H. Leas.		
Demos.	Tuscarawas.	1,325	25	37.3	+ 8.0	60	20†	17	10†	38	7.57	+ 4.83	0.92	7.9	12	3	16	s.	J. T. Dysart.			
Dennison.	Ross.	846	3	37.7	.....	61	20	13	5	35	7.61	.....	1.12	13.8	19	10	8	13	s.	Water Supply Co.
Frankfort.	Gallia.	580	1	39.4	+ 8.3	65	17	19	2	34	7.44	+ 4.56	1.20	3.0	18	6	5	20	s.	O. A. Cory.		
Gallipolis.	Portage.	1,005	26	34.1	+ 9.0	57	20	4	5	40	6.43	+ 3.44	1.21	12.2	18	5	6	20	sw.	Samuel F. Neal.		
Garrettsville.	Licking.	960	31	36.8 ^a	+ 9.6	60 ^a	20	15 ^a	9	34 ^a	7.63	+ 4.61	1.05	9.5	19	10	1	20	sw.	S. M. Luther.		
Granville.	Gratiot.	1,000	24	36.6	+ 7.9	60	20	15	5	35	8.10	+ 5.27	1.11	10.1	19	6	10	15	sw.	Dr. L. E. Davis.		
Green.	Adams.	500	20	42.3	+ 8.8	69	20	19	9	31	8.72	+ 5.09	2.09	3.0	11	12	3	16	se.	W. F. Kenyon.		
Green Hill.	Columbiana.	1,135	20	34.8	+ 8.8	60	20	4	5	38	5.64	+ 2.93	0.80	9.0	19	7	7	17	sw.	Jos. E. Bentley.		
Greenville.	Darke.	1,060	27	35.3	+ 7.7	57	20	15	31	32	8.16	+ 5.24	1.78	5.5	16	3	9	19	s.	Geo. A. Katzenberger.		
Hamilton.	Butler.	601	1	.....	.....	.....	.....	7	82	1.43	.....	3.0	13	.....	.....	.....	.....	.....	s.	Earl W. Stout.
Haydenville.	Hocking.	700	1	39.1 ^a	.....	63 ^a	21	12 ^a	22	39 ^a	7.25	.....	1.52	.....	17	9	5	17	w.	H. W. Stiers.
Hillsboro.	Highland.	1,063	34	.....	.....	.....	.....	6	33 ^a	1.05	.....	1.21	12.2	18	5	6	20	sw.	Carey H. Roush.	
Ironhton.	Lawrence.	575	30	43.2	+ 10.2	69	20	22	22	37	7.04	+ 3.24	1.37	.....	16	8	10	13	se.	James Bull.	
Kenton.	Hardin.	1,015	21	33.8	+ 6.4	58	20	7	5	25	6.7	+ 2.75	0.93	8.0	17	10	3	18	s.	Frank B. Rarey.		
Killbuck.	Holmes.	1,087	20	36.6	+ 8.8	58	11†	12	5	36	8.33	+ 5.54	1.60	9.5	18	13	6	12	ne.	John A. Schonauer.		
King's Mills.	Warren.	640	1	.....	.....	.....	.....	9	84	1.46	1.1	1.1	7	2	22	sw.	Frank M. See.			
Lancaster.	Fairfield.	898	18	38.8	+ 9.0	62	20	19	5†	37	9.05	+ 5.82	1.05	.....	18	10	4	17	s.	R. L. Renshaw.	
McConnellsburg.	Morgan.	710	29	38.4	+ 8.2	65	20	13	17	25	7.35	+ 4.00	1.41	8.2	18	7	5	19	se.	C. H. Raffensperger.		
Marietta.	Washington.	627	93	41.7	+ 10.1	66	20	21	4	38	7.45	+ 4.24	1.30	3.5	19	4	7	20	s.	Prof. T. D. Biscoe.		
Marion.	Marion.	980	35	34.7	+ 7.8	57	20	7	9	28	10.80	+ 8.01	1.88	15.0	16	7	7	17	se.	Prof. E. H. Raffensperger.		
Millfordton.	Knox.	1,200	21	34.8	+ 9.3	59	20	5	5	40	6.50	+ 3.54	1.03	14.5	17	7	8	16	sw.	L. H. Burress.		
Milligan.	Perry.	875	20	38.4	+ 8.6	65	20	12	5	38	8.28	+ 5.60	1.17	9.0	17	6	8	17	sw.	V. C. Eveland.		
Millport.	Columbiana.	1,145	20	34.5	+ 7.0	59	20	5	5	41	5.05	+ 2.42	0.81	10.3	18	9	2	20	sw.	G. F. Copeland.		
Nellie.	Coshocton.	850	13	37.2	+ 8.8	60	2	8	5	40	7.87	+ 5.15	1.25	11.0	19	3	8	20	s.	Ethel L. Gammelsfelder.		
New Berlin.	Stark.	1,100	20	34.0	+ 7.5	56	20	5	5	36	7.15	+ 4.67	1.55	13.0	18	11	0	20	s.	Clayton Holl.		
New Waterford.	Columbiana.	1,053	18	35.0	+ 7.8	60	20	4	5	41	6.43	+ 3.23	1.63	16.0	12	12	3	16	sw.	Sam. C. Scott.		
O. S. University.	Franklin.	757	30	37.7	+ 10.3	57	8†	15	9	35	7.35	+ 4.32	1.05	.....	18	2	14	15	s.	Prof. H. C. Lord.	
Oregonia.	Warren.	.....	.....	.....	.....	.....	.....	7	35	.....	.....	.....	.....	.....	.....	.....	.....	.....	s.	E. H. Stephens.
Pataskala.	Licking.	1,015	21	36.9	+ 9.3	61	20	13	9	36	7.41	+ 4.16	0.95	9.1	19	3	13	15	s.	J. N. Ridenour.		
Peebles.	Adams.	645	2	40.7	.....	67	20†	15	9†	40	9.96	.....	1.75	4.5	20	9	8	14	nw.	Ora O. Smalley.
Philo.	Muskingum.	1,018	18	39.5	+ 9.7	66	20	18	9	36	7.72	+ 5.40	1.08	6.2	18	8	4	19	s.	L. C. Burckholter.		
Piqua.	.....	847	3	.....	.....	.....	.....	9	83	1.08	8.2	14	11	3	17	s.	Harry L. Roberts.			
Plattsburg.	Clark.	1,130	20	35.8	+ 8.2	60	20	12	9	33	7.14	+ 4.11	1.24	13.5	19	8	6	17	s.	F. E. Stewart.		
Portsmouth.	Scioto.	527	82	41.9	+ 7.2	64	30	24	3†	34	8.99	+ 5.56	2.20	2.25	1.25	30	12	22	sw.	Dr. H. A. Schirrmann.		
Prospect.	Marion.	903	9	34.0	.....	60	20	24	3†	34	9.25	.....	2.75	3.0	12	.....	.....	.....	s.	Neil J. Gast.
Sidney.	Shelby.	985	30	34.8	+ 8.2	57	20	11	5	26	7.81	+ 5.08	1.57	8.3	20	4	4	23	s.	Hamline B. Blake.		
Somerset.	Perry.	1,080	14	38.2	+ 8.4	62	20	18	4	36	7.22	+ 4.11	0.90	8.5	16	5	12	15	s.	Miss M. W. Sheridan.		
Springfield.	Clark.	980	19	.....	.....	.....	.....	7	07	4.01	1.08	.....	2.00	20	10	6	10	15	s.	W. A. Webster.
Summerfield.	Noble.	1,187	7	39.7	.....	63	20†	16	5†	39	8.05	.....	1.03	9.1	19	9	3	15	s.	H. R. McClinton.
Syracuse.	Meigs.	583	2	43.0	.....	60	20	22	6	36	7.57	.....	2.54	3.0	17	8	8	15	w.	Irving R. Karr.
Thurman.	Gallia.	696	20	42.1	+ 9.3	69	20	20	4†	40	6.93	+ 3.94	2.00	4.0	10	6	9	16	sw.	D. D. Thomas.		
Toboso.	Licking.	.....	.....	.....	.....	.....	.....	7	82	1.72	10.0	19	6	4	21	sw.	H. A. Albyn.			
Urbana.	Champaign.	1,031	45	34.6	+ 7.0	59	20	8	5	34	8.29	+ 5.64	0.98	11.7	19	5	9	17	sw.	Prof. J. H. Williams.		
Warren.	Trumbull.	900	24	34.2	+ 7.5	56	8	8	5	33	6.44	+ 3.45	1.26	.....	17	7	3	21	s.	M. D. McCorkle.	
Waverly.	Pike.	590	30	40.4	+ 9.5	67	20	17	4	37	6.03	+ 2.57	0.97	2.8	17	5	11	15	sw.	Dr. Peter Hutt.		
Waynesville.	Warren.	700	28	37.8	+ 8.1	61	20	15	9	33	7.88	+ 4.54	1.20	3.5	18	9	5	17	sw.	Charles Michener.		
Wooster.	Wayne.	1,030	34	34.2	+ 7.9	57	20	4</														

TABLE I.—Climatological data for January, 1913. District No. 3—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.			
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of partly cloudy days.	Number of cloudy days.				
<i>Indiana—Continued.</i>																					
Logansport.	Cass.	620	33	31.4	+ 6.2	57	19†	9	13†	41	7.12	+ 4.97	1.60	4.0	17	8	1	22	e. se.		
Madison.	Jefferson.	460	21	41.4	+ 8.3	63	20	20	9†	33	10.79	+ 7.00	1.94	1.0	18	9	5	17	Miss F. Cooperider.		
Marengo.	Crawford.	363	31																J. M. Johnson.		
Marion.	Grant.	814	27	33.2	+ 6.1	57	20	10	13	29	7.57	+ 5.02	1.75	9.7	17	5	11	15	James F. Hood.		
Mauzy.	Rush.	980	33	35.4	+ 9.1	58	20	12	9	34	8.24	+ 4.99	1.30	10.4	16	6	8	17	Elwood Kirkwood.		
Monticello.	White.	674	3																J. E. Loughry.		
Moores Hill.	Dearborn.	980	12	38.4	+ 8.4	60	20	17	9	33	9.08	+ 5.69	1.60	4.1	18	9	4	18	W. S. Bigney.		
Mount Vernon.	Posey.	410	27	37.8	+ 4.3	65	15	13	31	9.80	+ 6.34	1.90	T.	5	6	5	20	Guy B. Green.			
Nashville.	Brown.	16	36.2			59	20	12	13	33	9.51		2.03	5.2	13	5	5	18	W. C. Goble.		
Paoli.	Orange.	611	16	39.2	+ 6.6	60	20	16	12	35	10.59	+ 7.30	2.27	4.5	17	6	11	14	James A. Gillum.		
Princeton.	Gibson.	481	31	38.6	+ 7.6	60	20	14	12	30	9.59	+ 6.56	1.92	2.0	14	9	3	19	Albert Mills.		
Richmond.	Wayne.	972	28	36.6	+ 8.1	59	20	8	4	27	7.64	+ 4.83	1.55	6.3	17	5	13	13	Walter Vossler.		
Rochester.	Fulton.	775	8	31.0		53	17†	10	21	27	5.67		1.20	5.5	12	8	11	12	G. P. Keith.		
Rockville.	Parke.	722	27	34.6	+ 6.4	59	20	7	J2	33	6.73	+ 4.27	1.60	3.4	14	4	11	16	C. A. Lee.		
Rome.	Perry.	370	10	42.6	+ 6.5	64	20†	20	12	35	12.20	+ 7.44	3.50	3.0	18	9	6	16	s. sw.		
Salamonia.	Jay.	950	8	32.8		58	20	9	4†	29	8.93		1.26	16.3	18	6	7	18	Adam Ansprach.		
Salem.	Washington.	717	20	38.9	+ 6.9	61	20	18	4†	33	11.50	+ 7.87	1.95	4.5	19	2	12	17	S. A. Armstrong.		
Scottsburg.	Scott.	570	19	39.2	+ 5.9	62	20	20	9†	28	10.73	+ 7.22	2.21	4.0	16	7	8	16	Emmett S. Allen.		
Seymour.	Jackson.	610	26	39.4	+ 7.8	62	20	19	13	30	9.70	+ 6.13	1.65	3.5	15	4	14	13	Frank H. Park.		
Shelbyville.	Shelby.	768	9	36.2		58	20†	15	5	28	4.84		1.34	8.3	16	2	13	15	J. Robt. Blair.		
Shoals.	Martin.	523	6	38.6		60	20†	18	12	33	9.64		1.43	3.0	14	3	14	14	Edgar G. Hodson.		
Terre Haute.	Vigo.	498	23	34.8	+ 5.0	60	20	5	31	40	7.71	+ 5.06	2.30	2.1	16	3	14	14	Rev. G. Halleck Rowe.		
Wheelersburg.	Fountain.	612	14	33.2	+ 5.4	58	20	6	12	32	6.41	+ 4.03	1.90	3.5	16	11	5	15	U. S. Weather Bureau.		
Vevay.	Switzerland.	525	32	42.2	+ 9.8	64	20	18	9	32	11.55	+ 7.57	2.25	T.	14	4*	7*	19*	L. A. Culver, jr.		
Vincennes.	Knox.	431	21	36.8	+ 5.8	60	20	17	13†	30	11.35	+ 8.13	2.00	1.0	16	9	0	22	Miss Frederica Boerner.		
Washington.	Daviess.	484	17	37.8	+ 6.4	60	21	14	12	42	10.81	+ 7.40	1.61	T.	14	11	9	11	Garrett V. List.		
Whitestown.	Boone.	529	5	32.6		58	20	13	21†	37	7.57		1.69	5.8	16	3	17	11	Charles C. Feagans.		
Winona Lake.	Kosciusko.	865	6	30.4		55	26	7	13	27	5.81		1.18	6.1	17	1	16	14	Clyde O. Laughner.		
Worthington.	Greene.	526	31	36.9	+ 7.9	59	20	14	12	29	8.40	+ 5.39	1.07	5.0	15	6	11	14	Rev. Albert A. Young.		
<i>Illinois.</i>																			D. W. Soliday.		
Albion.	Edwards.	531	22	37.8	+ 6.0	59	20†	13	12	29	9.37	+ 6.08	1.42	2.3	14	10	3	18	B. F. Michels.		
Casey.	Clark.	645	10								6.98	+ 4.64	2.05	T.	11	9	6	16	William Chenoweth.		
Charleston.	Coles.	720	28	33.8	+ 5.6	58	20	12*	21	33*	4.93	+ 2.66	1.50	1.8	3	14	14	Jacob B. Daisy.			
Danville.	Vermilion.	604	12	33.2	+ 6.7	57	20	5	12	33	7.17	+ 4.25	2.10	4.3	17	9	6	16	J. J. Lemon.		
Equality.	Gallatin.	421	15	41.1	+ 5.6	63	6	15*	12	31*	9.89	+ 5.60	3.20	2.0	16	13	2	16	Dr. L. W. Gordon.		
Fairfield.	Wayne.	450	20	37.4	+ 4.2	59	20	12	12	30	10.18	+ 7.07	1.53	3.0	14	4	12	15	Geo. A. Tromly.		
Flora.	Clay.	495	27	36.2	+ 5.8	59	20	11	12†	31	7.82	+ 4.63	1.36	2.0	13	9	7	15	W. L. Hanna.		
Golconda.	Pope.	500	35	40.1	+ 6.0	61*	20	17	12	29*	12.66	+ 8.74	2.58	1.0	11	11	7	13	Dr. D. Lawrence.		
Hooperston.	Vermilion.	715	11	31.1	+ 3.8	54	17†	2	12	40	6.21	+ 2.98	1.15	5.7	17	8	15	S. F. Hoskinson.			
McLeansboro.	Hamilton.	462	30	37.7	+ 6.0	60	20	12*	12	30*	9.55	+ 6.36	1.70	2.0	15	15	1	15	Prof. W. C. Fairweather.		
Metropolis.	Massac.	346	2								11.83		3.15	0	8	3	15		Henry W. Humma.		
Montrose.	Effingham.	599	3	34.0		59	20	8	12	35	6.31		1.44	0.5	12	6	12	13	J. C. Spitler.		
Mount Carmel.	Wabash.	424	12	36.5	+ 4.6	60	19†	13	12	33	9.76	+ 5.63	1.84	3.0	16	7	3	21	Mrs. H. M. Phillips.		
New Burnside.	Johnson.	613	18	38.6	+ 3.7	63	17	13	12	34	9.33	+ 5.69	2.38	1.0	15	16	3	12	Thomas H. McCabe.		
Newton.	Jasper.	484	22										1.29	1.5	14	10	8	13	J. M. Hicks.		
Olney.	Richland.	486	26	34.4	+ 2.6	50*	19	11	12†	34*	9.01	+ 5.97	1.33	1.4	6	11	14	n.w.			
Palestine.	Crawford.	500	31	36.6	+ 7.5	60	20	13	12	38	7.02	+ 3.99	1.09	1.0	15	11	5	15	John T. Ratcliff.		
Paris.	Edgar.	600	20	30.6	+ 2.5	59	16	7	12	32*	7.42	+ 4.82	1.65	0.5	12	4	16	Duane Shaw.			
Philo.	Champaign.	700	29	31.3	+ 5.4	57	20	5	12	38	6.69	+ 4.23	1.74	3.0	17	7	10	H. P. Twyman.			
Rantoul.	do.	768	22	31.6	+ 5.9	55	20	2	12	41	5.48	+ 3.17	1.05	4.5	16	10	3	18	H. A. Burr.		
Rileyville.	Saline.	400	16										9.45	+ 6.11	1.99	2.1	14	8	6	17	William Breiner.
Shawncetown.	Gallatin.	307	3										11.35		2.00	2.0	14		W. H. Thornberry.		
Tuscola.	Douglas.	644	20										6.75	+ 4.17	1.85	1.8	14	8	12	Mrs. Mary O. Spivey.	
Urbana.	Champaign.	725	11	30.8	+ 5.1	58	20	3	12†	40	5.45	+ 2.87	1.19	3.0	14	1	16	Joseph O'Neal.			
<i>Kentucky.</i>																			Prof. J. G. Mosier.		
Alpha.	Clinton.	19	48.8	+ 8.5	68	16	25	13	31	11.76	+ 6.91	3.15	2.0	12	12	3	16	w.	W. W. Hicks.		
Anchorage.	Jefferson.	700	12	41.2	+ 7.7	65	20	19	4†	38	10.84	+ 7.48	2.72	2.0	15	12	3	16	C. E. Barrett.		
Bardstown.	Nelson.	637	16	42.3	+ 6.5	67	20	21	9	35	13.99	+ 9.72	2.70	1.0	14	6	6	19	T. S. Talbott.		
Beattyville.	Lee.	650	9	42.0	+ 7.5	76	7	17	4	50	10.24	+ 6.23	2.58	4.0	14	6	7	18	G. W. Cann.		
Beaver Dam.	Ohio.	441	10	42.1	+ 7.3	69	6	20	13	35	13.85	+ 9.41	3.15	1.0	13	9	4	18	W. T. Austin.		
Berea.	Madison.	1,070	12	45.8	+ 8.8	67	8†	21	14	41	9.84	+ 6.00	2.52	T.	12	4	10	18	C. F. Rumold.		
Blandville.	Ballard.	445	32	40.6	+ 7.2	67	5	16	12	35	12.47	+ 8.06	2.61	T.	11	9	4	18	E. W. Horr.		
Bowling Green.	Warren.	500	24	42.6	+ 5.6	67	20	21	4†	39	12.76	+ 8.25	3.40	2.0	13	10	0	21	Mrs. L. G. Causey.		
Burnside.	Pulaski.	773	22								9.20	+ 5.45	2.70	0.2	13	4	12	15	G. M. Estes.		
Calhoun.	McLean.	397	10	42.4	+ 5.5	66	5	19	12	34	11.70	+ 7.80	3.62	0.5	16	4	12	15	W. A. Taylor.		
Caldettsburg.	Boyd.	544	24								7.56	+ 3.66	2.00	2.0	18				Mrs. Mertie M. Bruns.		
Earlington.	Hopkins.	370	23	40.7	+ 5.1	68	5	13	12†	41	11.07	+ 7.84	3.50	T.	10	5	2	24	Brick Southworth.		
Edmonton.	do																				

TABLE 1.—Climatological data for January, 1913. District No. 8—Continued.

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.						Precipitation, in inches.						Sky.	Prevailing wind direction.	Observers.	
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmeasured.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.	
Kentucky—Continued.																			
St. John.....	Hardin.....	777	17	39.2	+ 5.0	63	19	21	4†	37	12.79	+ 8.51	2.40	2.5	14	10	0	21	Bethlehem Academy.
Scott.....	Kenton.....	15	41.0	+ 8.9	71	20	17	9	33	10.33	+ 6.85	1.90	4.9	18	5	8	18	s.	
Shelby City.....	Boyle.....	1,087	19	42.5	+ 7.9	68	20	18	9†	41	10.89	+ 6.47	2.42	—	14	11	5	15	H. F. Ewing.
Shelbyville.....	Shelby.....	759	24	42.6	+ 8.9	65	20	21	9	33	13.36	+ 9.39	4.60	2.5	15	5	9	17	C. R. Burnett.
Taylorsville.....	Spencer.....	489	11	43.2	+ 9.4	67	20	21	9	35	12.95	+ 9.28	4.35	0.8	18	7	17	s.	
Williamsburg.....	Whitley.....	939	17	45.4	+ 7.5	73	7	19	14	43	9.25	+ 5.64	2.70	1.8	10	0	21	s.	
Williamstown.....	Grant.....	943	11	37.5	+ 5.9	65	20	14	10	39	9.75	+ 6.66	1.69	1.2	17	9	3	19	Noble C. Jones. Miss Rose Carter.
Tennessee.																			
Ashwood.....	Maury.....	725	40	47.4	+ 8.1	70	7†	23	13	37	8.82	+ 3.88	1.75	0	15	6	5	20	s.
Benton.....	Polk.....	880	29	49.4	+ 8.9	74	7	24	14	38	8.64	+ 4.04	2.10	T.	10	8	5	18	Mrs. Joseph W. Fleming. George L. Williams.
Birds Bridge.....	Greene.....	7	—	—	—	—	—	—	—	—	5.08	—	0.93	3.0	14	11	2	18	David B. George.
Bluff City.....	Sullivan.....	18	—	—	—	—	—	—	—	—	4.75	+ 2.15	0.93	3.0	13	4	9	s.	Walter C. Masengill.
Byrdstown.....	Pickett.....	1,026	21	47.6	+ 9.6	69	7†	23	13	43	10.45	+ 6.25	2.10	—	17	12	3	18	John Lucy.
Carthage.....	Smith.....	500	30	47.5	+ 9.9	72	7	20	12	42	10.02	+ 5.75	2.40	0.8	15	7	2	22	Earl C. Pickering.
Cedar Hill.....	Robertson.....	625	15	44.0	+ 5.4	68	20	22	3†	38	14.63	+ 10.67	4.70	1.0	16	12	5	14	J. Frank Ruffin.
Celina.....	Clay.....	494	10	—	—	—	—	—	—	—	10.52	—	3.14	T.	13	6	3	22	Charles M. Anderson.
Charleston.....	Bradley.....	709	29	—	—	—	—	—	—	—	7.21	+ 2.43	1.10	T.	13	5	2	24	John T. Weeks.
Chattanooga.....	Hamilton.....	808	34	48.8	+ 8.2	73	7	27	9	39	7.13	+ 5.05	1.50	0.1	18	5	12	14	U. S. Weather Bureau.
Clarksville.....	Montgomery.....	500	53	45.6	+ 8.4	70	20	23	12	34	14.70	+ 10.56	4.20	1.5	16	13	4	14	Prof. James A. Lyon.
Clinton.....	Anderson.....	800	29	—	—	—	—	—	—	—	10.35	+ 5.58	2.00	0.6	13	7	4	20	Della Evans.
Crossville.....	Cumberland.....	1,895	1	44.8	—	66	7	20	3†	39	10.79	—	2.20	1.6	19	15	7	9	J. E. Converse.
Dandridge.....	Jefferson.....	8	—	—	—	—	—	—	—	—	6.84	—	1.10	—	12	8	4	19	w.
Decatur.....	Meigs.....	850	18	46.6	+ 6.9	70	7	15	9	38	9.39	+ 5.33	2.00	0	20	8	3	10	s.
Dickson.....	Dickson.....	800	20	45.7	+ 7.3	69	6†	21	13	40	13.72	+ 8.99	3.64	0.5	14	9	5	17	Nathan R. Sugg.
Dover.....	Stewart.....	500	17	45.0	+ 5.9	69	5	22	13	36	13.45	+ 9.13	3.70	—	9	9	7	15	Asa M. Tippit.
Dunlap.....	Sequatchie.....	726	4	47.8	—	71	7	23	4	39	12.07	—	2.38	0.5	15	6	12	13	S. Bradford Boyd.
Elizabethhton.....	Carter.....	1,575	22	—	—	—	—	—	—	—	5.35	+ 2.46	0.90	2.5	14	18	0	15	Charles Boyd.
Erasmus.....	Cumberland.....	1,850	16	43.7	+ 6.6	69	7	15	4†	42	10.99	+ 6.12	3.94	0.8	13	8	9	14	Mrs. Sarah E. Ashley.
Florence.....	Rutherford.....	560	31	47.0	+ 8.4	71	6	24	13	40	11.81	+ 7.41	3.15	3.0	13	9	6	15	Erastus P. Bell.
Franklin.....	Williamson.....	648	25	45.6	+ 7.9	67	7	24	3	36	10.87	+ 6.62	3.21	0.5	13	11	5	15	Young M. Rizer.
Halls Hill.....	Rutherford.....	10	—	—	—	—	—	—	—	—	11.73	—	3.60	1.0	13	13	2	16	Edward F. Wright.
Hohenwald.....	Lewis.....	983	30	47.0	+ 8.6	69	20	20	13†	41	11.96	+ 7.14	2.25	T.	15	9	10	12	Mrs. Mary Lutzelman.
Iron City.....	Lawrence.....	600	18	48.0	+ 7.5	71	7	20	13†	43	11.71	+ 6.93	1.80	0	13	4	17	10	Capt. H. Paul Seavy.
Jefferson City.....	Jefferson.....	3	—	—	—	—	—	—	—	—	8.14	—	1.73	4.0	14	14	0	15	Calvin C. Maddox.
Johnson City.....	Washington.....	1,620	20	44.5	+ 8.0	75	7	16	4	42	4.16	+ 1.24	0.93	3.0	11	18	8	5	Ward Crosby.
Johnsonville.....	Humphreys.....	364	29	46.0	+ 6.4	70	20	22	13†	38	12.41	+ 8.10	2.70	0	18	7	6	18	Miss Sallie B. Mathews.
Kingston.....	Roane.....	29	—	—	—	—	—	—	—	—	9.34	+ 4.64	2.02	T.	12	12	0	19	Henry Crumbliss.
Knoxville.....	Knox.....	977	42	46.4	+ 9.0	73	7	25	4	40	8.93	+ 3.96	1.91	2.4	18	8	6	17	U. S. Weather Bureau.
Lebanon.....	Wilson.....	522	42	47.8	—	70	7	22	13†	42	9.47	—	2.20	0.3	14	8	5	18	H. Logan Fields.
Lewisburg.....	Marshall.....	727	19	47.8	+ 7.1	72	7	22	13	43	10.69	+ 6.11	2.60	1.5	16	10	6	15	Dr. Robert D. Crutcher.
Liberty.....	Pekab.....	672	18	—	—	—	—	—	—	—	8.28	+ 3.55	1.60	1.0	12	5	3	23	Britten Evans.
Loudon.....	Loudon.....	816	21	—	—	—	—	—	—	—	8.07	+ 4.88	2.82	0.5	14	9	7	15	Robert W. Clark.
Lynnville.....	Ciles.....	770	26	45.6	+ 6.5	68	6†	25	13	34	9.48	+ 4.88	1.49	3.0	11	13	0	18	Col. James H. Burrow.
McGhee.....	Monroe.....	8	—	—	—	—	—	—	—	—	8.07	—	0.56	—	14	16	0	18	Miss Alice L. Headrick.
McMinnville.....	Warren.....	1,011	32	49.4	+ 10.2	74	7	24	9†	40	11.32	+ 6.50	2.25	1.0	13	12	7	12	Horace H. Stiles.
Maryville.....	Blount.....	1,050	20	46.0	+ 6.7	72	7	23	3	33	8.11	+ 3.76	1.94	0	8	16	3	12	Mrs. Sam T. Broyles.
Mountain City.....	Johnson.....	2,486	16	43.8	+ 9.0	74	7	15	15	46	3.40	—	0.17	0.75	16	8	6	15	Edward E. Barry.
Nashville.....	Davidson.....	654	42	45.4	+ 7.4	69	20	26	8	36	12.30	+ 7.45	3.51	0.5	16	8	6	15	U. S. Weather Bureau.
Newport.....	Cooke.....	1,250	23	—	—	—	—	—	—	—	5.65	+ 2.26	1.07	2.5	13	11	3	17	Dr. Charles T. Burnett.
New River.....	Scott.....	1,215	5	—	—	—	—	—	—	—	10.55	—	3.30	1.6	11	7	4	20	Burl W. Buttram.
Palmetto.....	Bedford.....	770	23	48.1	+ 8.5	71	6	23	13	39	11.07	+ 6.21	2.02	1.5	14	9	7	18	Mrs. Ross Woods.
Perryville.....	Decatur.....	387	17	47.0	—	70	20	22	13	37	16.24	+ 11.76	4.42	0	12	11	2	18	Oliver C. Kirksey.
Pinewood.....	Hickman.....	7	—	46.14	—	71	20	20	1	43†	16.62	—	T.	—	—	—	—	Miss Carrie Cash.	
Rogersville.....	Hawkins.....	1,150	29	45.0	+ 8.5	70	6†	14	4	35	6.33	+ 2.76	0.90	0.5	13	11	9	11	Fred Beal.
Rugby.....	Morgan.....	1,410	24	44.8	+ 9.2	68	7	17	13	41	9.57	+ 4.60	3.45	1.0	16	8	5	18	Samuel G. Wilson.
Savannah.....	Floyd.....	442	30	47.7	+ 7.1	69	19	22	13	37	13.30	+ 8.68	2.30	T.	16	8	5	18	W. H. Carrington.
Sevierville.....	Sevier.....	7	—	45.4	—	75	7	19	4	39	8.34	—	1.70	6.5	13	7	3	21	Herbert O. Eckel.
Sewanee.....	Franklin.....	2,000	19	47.6	+ 9.4	66	7	20	9	32	9.76	+ 5.61	2.81	2.0	7	9	1	21	Univ. of the South.
Sparta.....	White.....	920	7	47.4	—	72	7	23	4†	41	10.64	—	3.00	1.0	11	6	8	17	Ernest H. Hull.
Springville.....	Henry.....	377	11	43.8	+ 4.7	67	5†	19	14	36	13.76	+ 10.27	5.00	T.	16	12	4	15	Hudnall A. Boden.
Tazewell.....	Claiborne.....	1,350	16	41.0	—	70	7	13	4	43	9.84	+ 6.08	2.45	4.0	15	8	0	23	J. Caloway Carr.
Tulahoma.....	coffee.....	1,075	26	48.3	+ 10.7	69	7†	24	3†	42	11.32	+ 6.20	3.23	1.5	14	5	12	14	Reuben T. Moore.
Walling.....	White.....	909	9	—	—	—	—	—	—	—	12.76	—	5.00	2.0	11	8	1	22	John K. Roberts.
Waynesboro.....	Wayne.....	753	28	46.6	+ 7.1	69	20	20	13	37	11.15	+ 6.71	1.80	1.0	19	7	7	17	Harry C. Boyd.
Wildersville.....	Henderson.....	400	17	—	—	—	—	—	—	—	13.78	—	2.85	0	15	10	4	17	William R. Wilson.
Worsham.....	Sumner.....	550	11	—	—	—	—	—	—	—	15.93								

TABLE 1.—*Climatological data for January, 1913. District No. 3—Continued.*

Stations.	Counties.	Elevation, feet.	Length of record, years.	Temperature, in degrees Fahrenheit.								Precipitation, in inches.								Prevailing wind direction.	Observers.
				Mean.	Departure from the normal.	Highest.	Date.	Lowest.	Date.	Greatest daily range.	Total.	Departure from the normal.	Greatest in 24 hours.	Total snowfall, unmelted.	Number of rainy days, 0.01 inch or more.	Number of clear days.	Number of partly cloudy days.	Number of cloudy days.			
<i>North Carolina—Contd.</i>																					
Bryson City.....	Swain.....	2,000	25	45.4	.....	72	7	15	15	45	6.36	+ 2.00	1.31	1.0	14	11	3	17	nw.	D. K. Collins.
Cullowhee.....	Jackson.....	2,100	3	45.4	+ 8.4	68	7†	17	15	37	4.18	—	1.23	0.1	10	20	6	5	nw.	Frank H. Brown.	
Hendersonville.....	Henderson.....	2,167	16	44.8	+ 6.1	58	19†	15	4	31	7.88	+ 1.73	1.80	0	13	13	6	12	nw.	Dr. L. B. Morse.	
Highlands.....	Macon.....	3,850	23	39.4	+ 6.1	58	19†	15	4	40	4.37	—	1.27	4.0	11	14	10	7	e.	T. G. Harbison.	
Hot Springs.....	Madison.....	1,326	15	48.1	+ 7.1	73	7†	21	4	40	4.37	—	1.22	1.0	11	9	2	20	w.	P. A. Garner.	
Jefferson.....	Ashe.....	2,900	6	42.4	.....	69	7	13	4	46	2.85	—	1.22	1.6	12	12	6	18	w.	Prof. E. J. Johnson.
Marshall.....	Madison.....	1,646	11	45.0	+ 7.8	71	7	22	9	33	3.68	+ 1.40	1.02	0.8	9	9	4	18	w.	M. L. Church.	
Murphy.....	Cherokee.....	1,614	37	43.3	.....	60	25	20	3	29	6.12	+ 0.52	1.12	1.0	11	9	2	20	w.	Miss Victoria Minges.
Rock House.....	Macon.....	3,100	21	43.3	+ 6.2	60	25	20	3	29	7.30	+ 1.01	1.79	0.3	16	8	12	11	sw.	Barry C. Hawkins.	
Transon.....	Ashe.....	2,600	1	40.9	.....	64	7	14	10	35	3.03	—	1.35	0	8	14	11	6	sw.	S. M. Transou.
Waynesville.....	Haywood.....	2,792	19	.....	.....	.....	.....	.....	.....	.....	.....	—	.....	.....	.....	.....	.....	.....	.....	Judge J. C. L. Gudger.
<i>Virginia.</i>																					
Blacksburg.....	Montgomery.....	2,170	22	41.6	+ 9.2	72	7	16	10	38	2.69	— 0.24	1.05	2.0	10	10	8	13	w.	Agricultural Exper. Station.	
Burkes Garden.....	Tazewell.....	3,250	18	39.0	+ 7.8	65	11	11	4†	46	4.03	+ 0.97	0.85	6.0	9	10	3	18	w.	C. H. Grever.	
Elk Knob.....	Lee.....	3,243	10	43.6	+ 7.8	65	7	13	4	35	8.59	+ 4.72	1.76	5.0	16	9	7	15	sw.	Henry Nicoll.	
Ivanhoe **.....	Wythe.....	2,028	9	39.6	.....	68	7	16	14	32	2.68	—	0.88	0.2	9	15	8	8	w.	Miss Alice G. Jewett.
Lebanon.....	Russell.....	2,131	3	43.2	72	7	17	4	44	—	1.79	0.3	16	13	21	0	10	James M. Graham.
Max Meadows.....	Wythe.....	2,028	17	41.2	+ 7.3	72	7	14	10	40	1.88	— 1.28	1.35	1.5	4	15	7	9	w.	Frank M. Barker.	
Mendota.....	Washington.....	1,350	4	64	11	6.23	—	0.87	0	14	8	13	3	15	H. E. Dorland.
Mountain Lake.....	Giles.....	4,348	3	.....	.....	64	11	.....	.....	.....	3.50	—	0.80	5.0	8	13	3	15	n.	Arthur Roberts.
Radford.....	Montgomery.....	1,773	4	.....	.....	.....	.....	.....	.....	.....	2.75	—	1.02	0	4	4	.....	.....	.....	Miss L. E. Venable.
Speers Ferry.....	Scott.....	1,221	17	.....	.....	.....	.....	.....	.....	.....	8.20	+ 4.35	1.80	2.0	13	10	.....	.....	.....	U. S. Weather Bureau.
Wytheville.....	Wythe.....	2,293	20	42.4	+ 9.4	72	7	19	10	36	2.80	— 1.50	1.20	1.0	11	12	7	12	w.	.....

*, b, c, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

** Temperature extremes are from observed readings of the dry bulb; means are computed from observed readings.

† Also on other dates.

T. Precipitation is less than 0.01 inch rain or melted snow.

TABLE 2.—*Daily precipitation for January, 1913. District No. 3, Ohio Valley.*

TABLE 2.—*Daily precipitation for January, 1913.* 'District No. 3—Continued.

TABLE 2.—*Daily precipitation for January, 1913. District No. 3—Continued.*

TABLE 2.—*Daily precipitation for January, 1913.* District No. 8—Continued.

TABLE 2.—*Daily precipitation for January, 1913. District No. 3—Continued.*

Stations.	Watershed.	Day of month.																														Total									
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31									
<i>North Carolina—Continued.</i>																																									
Brevard.....	Tennessee.....	.50	.25	.50	T.	.25				T.	.61																							.34	2.81						
Bryson City II.....	do.....	.26																																	.05	6.36					
Cullowhee.....	do.....	.13		T.	T.	.13																													.43	4.18					
Hendersonville.....	do.....	.50				.03					.03	.01																						.42	3.41						
Highlands.....	do.....	.55		.08	.26	.10	.65			.02	1.20																							.38	7.88						
Hot Springs.....	do.....	.40																																	.18	4.37					
Jefferson.....	G. Kanawha.....	.40				.02	T.	T.		T.																									.27	2.85					
Marshall.....	Tennessee.....	.38																																		.13	3.68				
Murphy II.....	do.....																																			.03	6.12				
Roch House.....	Savannah.....	T.	.86	.48	T.	.05	.22	.13	.46		.04	.18	.63																					.45	7.30						
Transon.....	G. Kanawha.....	.42				T.	.17			T.																									.21	3.03					
Waynesville II.....	Tennessee.....																																								
<i>Virginia.</i>																																									
Blacksburg.....	Kanawha.....	.07																																			.12	2.69			
Burkes Garden.....	Tennessee.....	.40																																			T.	4.03			
Elk Knob.....	do.....	T.																																							
Ivanhoe II.....	Kanawha.....	.44	.05		T.	T.	.52			T.	.06	.03	.97																							.41	8.59				
Lebanon.....	Tennessee.....	.02	.01																																			.26	2.68		
Max Meadows.....	Kanawha.....	.18																																					.08	0.47	
Mendota II.....	Tennessee.....	.43	.23																																				.10	1.88	
Mountain Lake.....	Kanawha.....	.30																																					.20	6.23	
Radford II.....	do.....	.75																																					.40	3.50	
Speers Ferry II.....	Tennessee.....	.62	.20																																				.22	8.20	
Wytheville.....	Kanawha.....	.47																																						.22	2.80

* Precipitation included in that of the next measurement.

† Separate dates of falls not recorded.

|| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

MONTHLY WEATHER REVIEW.

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TABLE 3.—Maximum and minimum temperatures for January, 1913. District No. 8, Ohio Valley.

Date.	Pennsylvania.				West Virginia.												Ohio.											
	Greenville.		Pittsburgh.		Charleston.		Elkhorn.		Elkins.		Glenville.		Huntington.		Morgan-		Parkers-		Wheel-		Canton.		Cincin-		Colum-		Dayton.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	41	24	47	32	53	29	52	30	47	27	60	22	50	27	49	29	49	30	48	25	43	23	52	30	45	29	48	28
2....	49	27	56	38	62	30	56	34	60	27	65	35	58	29	58	38	60	31	56	26	47	35	56	34	50	31	48	33
3....	43	29	47	23	61	25	50	22	51	20	47	21	29	27	55	20	48	23	35	27	42	24	34	23	35	22	33	20
4....	31	21	30	22	46	25	48	20	35	21	37	21	41	25	41	20	33	24	30	23	26	21	34	24	29	19	29	
5....	37	6	51	23	60	33	57	35	54	30	55	28	58	27	38	24	54	27	42	23	37	8	55	24	48	20	53	19
6....	47	35	54	47	65	45	60	33	64	49	60	35	58	32	61	37	54	46	50	28	47	36	57	44	53	37	53	38
7....	51	32	59	50	66	53	69	54	61	48	60	48	63	50	59	49	61	47	61	39	55	32	62	40	34	56	34	
8....	55	23	59	22	66	34	66	31	63	23	64	31	43	42	61	33	60	26	.....	25	55	20	46	24	52	18	43	21
9....	31	14	33	19	44	27	50	26	42	18	43	24	38	27	35	18	37	25	.....	31	18	36	20	32	16	34	18	
10....	39	16	43	29	50	28	49	28	45	18	48	29	55	25	42	25	47	27	.....	37	22	48	28	39	28	42	27	
11....	52	35	56	40	70	43	68	46	65	39	60	38	60	28	56	40	57	47	.....	53	35	58	39	55	38	55	35	
12....	42	19	53	21	70	35	64	33	60	24	47	20	37	37	56	27	53	26	.....	47	17	39	22	38	20	35	20	
13....	32	8	38	21	51	24	42	26	44	17	51	20	46	25	.....	45	24	41	35	15	44	22	40	20	39	20		
14....	40	12	44	29	51	28	50	28	48	25	50	21	43	25	46	16	44	29	46	25	40	19	42	28	39	24		
15....	43	22	50	37	60	30	58	30	58	20	60	23	53	26	53	30	54	31	52	26	42	30	46	33	43	31	45	30
16....	49	37	54	42	67	43	62	37	57	40	54	40	61	27	52	39	62	43	60	40	48	41	61	46	54	41	56	44
17....	55	44	59	52	66	52	69	40	63	46	56	41	63	45	62	60	50	54	46	53	47	60	53	55	50	55	51	
18....	54	32	56	35	64	49	59	49	57	32	62	46	60	50	.....	60	35	58	50	53	33	55	36	53	33	53	33	
19....	42	29	48	32	68	30	60	30	59	24	61	24	60	29	58	28	56	28	52	29	45	28	58	32	52	30	55	
20....	58	32	63	30	70	40	65	40	65	32	70	35	68	29	64	.....	68	35	65	29	59	30	64	33	62	28	60	29
21....	32	17	32	22	69	30	64	33	50	19	66	28	33	30	.....	24	35	28	35	27	31	20	37	27	30	23	32	24
22....	38	18	40	33	45	30	55	34	44	23	48	24	56	28	40	19	40	24	47	23	38	21	41	27	38	26	40	27
23....	56	26	60	39	66	36	60	46	60	40	62	22	62	28	59	33	61	38	61	25	54	31	61	38	57	33	54	35
24....	46	30	44	37	66	43	58	54	56	40	61	34	55	45	58	35	51	40	49	39	39	30	45	39	41	35	40	32
25....	45	24	47	33	52	33	56	43	51	30	64	35	49	33	48	31	50	33	51	31	45	26	50	32	47	31	46	26
26....	55	34	54	40	55	28	58	33	58	29	64	36	57	33	55	32	56	41	57	34	54	40	53	35	52	36	50	
27....	46	24	50	27	58	30	47	34	49	27	60	32	40	35	51	30	51	30	37	34	46	25	48	33	44	27	44	28
28....	29	22	34	27	60	27	40	25	35	26	53	32	43	27	33	25	39	27	38	26	29	24	40	32	36	28	34	24
29....	34	23	36	31	48	32	41	35	40	29	38	24	43	30	36	31	40	32	45	28	30	25	42	25	36	24	37	22
30....	47	26	56	35	67	32	62	32	62	27	66	24	61	35	59	33	60	38	53	34	45	29	60	40	54	34	56	37
31....	47	23	55	28	67	37	51	40	54	29	42	23	51	35	58	33	55	30	53	38	47	26	52	12	48	8	50	8
Mns..	44.1	24.6	48.6	31.8	60.1	34.4	56.3	34.9	53.5	29.0	55.9	29.8	51.4	31.8	51.5	30.2	51.6	32.7	49.1	30.7	43.6	26.6	49.6	31.6	45.6	28.1	45.7	28.1
Date.	Ohio.				Indiana.												Kentucky.											
	Marion.		Waverly.		Butlerville.		Evansville.		Indianapolis.		Kokomo.		Rockville.		Worthington.		Philo, Ill.		Beattyville.		Bowling Green.		Earlington.		Greensburg.		Lexington.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1....	42	22	50	23	51	24	55	31	47	27	45	23	50	20	50	22	47	18	61	20	56	25	57	26	68	24	53	33
2....	46	34	56	28	49	35	50	26	48	27	44	32	46	31	49	32	43	26	60	22	63	40	55	34	61	24	57	32
3....	44	24	52	24	35	22	35	25	29	22	39	20	32	22	33	24	33	22	39	22	35	23	32	25	32	22	32	22
4....	24	15	30	17	33	22	48	29	27	19	27	18	30	22	33	23	26	16	60	21	59	23	58	23	51	23	51	23
5....	33	10	37	25	47	22	61	30	48	18	31	9	36	19	45	22	32	14	70	20	64	34	68	32	69	28	64	30
6....	46	32	58	33	55	42	61	39	49	33	45	30	54	32	57	37	33	25	58	31	62	55	57	41	60	38	56	50
7....	36	31	59	42	56	41	40	31	40	32	33	23	38	31	40	34	32	29	76	40	62	52	47	35	62	54	60	49
8....	43	23	59	29	47	21	31	23	33	23	33	19	39	21	38	24	29	18	54	32	28	26	27	22	32	31	49	24
9....	33	7	38	23	37	19	38	26	33	20	32	14	35	16	36	23	31	19	48	20	41	23	42	20	44	26	36	19
10....	36	22	39	20	40	24	50	35	38	35	40	30	47	31	37	26	39	24	57	27	56	21	61	26	53	49	31	49
11....	51	34	55	37	55	39	53	31	47	31	40	32	46	38	36	22	63	25	58	40	56	36	62	34	57	49		
12....	42	23	54	30	52	20	31	16	31	14	34	10	34	7	40	14	22	5	36	34	30	24	25	32	30	53	23	
13....	38	17	44	20	40	17	38	23	36	15	3																	

TABLE 3.—*Maximum and minimum temperatures at selected stations for January, 1913. District No. 3—Continued.*

Date.	Kentucky.						Tennessee.										Decatur, Ala. §§		Asheville, N. C.		Virginia.								
	Louisville.		Maysville. §§		Williamsburg. §§		Chattanooga.		Johnson City. §§		Knoxville.		Nashville.		Palmetto.		Sparta.		Waynesboro.				Blacksburg.		Wytheville.				
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.			
1....	55	32	57	23	57	22	55	32	54	28	53	29	56	30	57	27	59	43	59	24	58	28	56	29	52	27	50	30	
2....	58	28	59	26	58	23	57	35	52	28	53	29	62	27	60	38	56	35	62	37	63	28	52	26	54	22	55	24	
3....	30	25	28	25	34	24	37	28	26	25	45	25	37	26	50	24	53	25	41	24	42	26	48	23	42	24	41	21	
4....	42	28	45	23	51	24	63	31	56	16	60	25	65	29	64	25	60	23	65	28	.....	26	52	26	48	23	49	20
5....	59	30	57	25	65	22	67	54	63	21	66	50	65	58	65	58	66	40	65	56	.....	56	48	59	27	58	32	
6....	60	45	58	30	65	40	66	56	68	49	69	46	62	56	71	60	63	53	64	58	.....	61	50	59	29	61	46	
7....	62	38	60	42	73	54	73	61	75	51	73	55	67	37	70	61	72	52	63	56	.....	70	58	72	47	72	53	
8....	38	27	37	36	40	39	67	28	57	55	68	23	37	26	66	27	69	28	56	25	50	.....	62	34	63	29	62	26
9....	38	23	41	19	48	27	47	27	51	25	43	28	42	28	47	24	48	25	45	24	47	27	39	22	38	21	39	20	
10....	48	31	54	18	55	24	43	36	40	25	41	30	55	36	45	33	48	31	49	42	55	27	53	26	38	16	41	19	
11....	58	39	56	28	66	40	61	43	64	30	66	40	64	42	63	45	63	47	65	47	66	41	66	53	67	33	70	37	
12....	39	23	34	32	50	45	62	35	46	36	66	34	42	26	63	28	64	30	63	27	39	38	56	33	51	34	59	28	
13....	43	24	48	22	55	39	53	32	54	28	51	30	48	26	50	23	53	23	46	20	53	28	43	28	39	23	40	21	
14....	40	28	49	23	52	19	55	32	57	28	53	30	50	30	56	25	57	23	56	22	57	27	52	26	48	18	48	23	
15....	55	32	52	27	53	23	57	40	56	25	54	28	59	38	60	33	60	30	61	33	61	30	56	28	53	17	55	20	
16....	62	51	60	31	67	26	63	45	63	29	62	35	64	50	64	47	68	47	65	46	67	38	62	32	63	26	64	28	
17....	61	54	60	47	65	49	66	53	69	31	67	41	62	53	61	53	62	43	60	54	65	45	64	43	63	34	62	35	
18....	56	37	60	49	63	50	66	49	55	37	65	46	59	42	66	54	63	48	68	44	65	53	59	44	58	46	54	35	
19....	62	34	61	27	66	49	65	40	68	33	63	36	63	36	66	37	66	32	60	35	66	42	61	31	60	25	61	28	
20....	66	31	68	28	68	42	65	53	69	33	69	47	69	33	69	60	69	52	69	42	69	50	60	49	62	34	60	35	
21....	36	26	37	27	36	28	53	40	45	38	55	37	36	31	65	33	65	35	42	32	42	35	57	40	54	37	57	33	
22....	42	28	50	23	58	33	51	36	57	37	52	36	54	32	54	33	58	32	53	30	58	36	53	39	52	28	52	34	
23....	59	42	61	23	65	34	61	51	64	38	61	44	64	51	61	45	62	40	62	49	64	37	56	43	52	35	57	40	
24....	45	39	44	41	58	50	61	55	58	50	58	53	51	44	61	48	60	40	61	45	61	58	55	48	56	45	56	50	
25....	50	31	54	30	58	42	60	44	58	49	53	40	50	39	48	37	53	43	45	36	49	46	57	43	55	43	53	38	
26....	54	37	54	30	56	32	50	38	59	35	51	32	48	33	56	34	55	32	52	31	56	40	61	34	59	30	61	36	
27....	47	32	40	35	48	30	45	36	40	39	45	32	45	32	48	29	52	37	46	31	43	40	48	32	42	37	46	28	
28....	39	31	41	25	59	28	50	30	45	25	45	27	46	29	46	25	50	30	49	22	50	27	46	26	44	20	43	22	
29....	45	23	42	18	61	35	51	36	45	26	47	35	50	31	50	30	45	24	52	29	53	26	46	31	44	28	40	32	
30....	59	41	63	28	63	36	60	34	60	29	58	30	58	42	57	40	61	29	60	39	59	34	57	26	62	24	59	31	
31....	54	15	48	38	48	20	51	35	58	31	57	31	55	34	54	33	53	33	54	35	49	38	49	29	51	37	52	29	
Mns..	50.4	32.4	50.9	29.0	57.1	33.8	57.5	40.2	55.9	33.1	57.1	35.8	54.4	36.4	58.5	37.7	59.1	35.6	56.9	36.2	55.8d	36.0d	55.3	35.3	53.5	35.3	29.8	54.1	30.8

*, b, e, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

§§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.